MicroWeigh Single/Dual Bagger

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Contents

1 Introduction

With the WeighTech MicroWeigh a combination of state-of-the-art technology with common down-to-earth basics creates a digital indicator that makes troubleshooting and actual maintenance repair so simple that anyone can be trained to make repairs on this indicator in just minutes.

1.1 MicroWeigh Features

- High impact ABS alloy construction.
- Highly visible, easy-to-read display with adjustable contrast and backlight.
- Environmentally sealed touch-sensitive operator control panel.
- Standard units of measure include grams, kilograms, ounces, and pounds.
- RS-232 and Infrared communications are standard with RS-485 option available.
- Wireless data collection using a PDA with WeighTech ScaleTrax software.

1.2 MicroWeigh Applications

- Standard weighing
- Label printing
- Tank or vat weighing
- Checkweighing (boxes, bags, and pieces)
- Bench and floor scales
- Batch weighing

2 Keypad Operation

The WeighTech MicroWeigh keypad is a watertight sealed touch sensitive sensor. The keys are actually sensitive to contact area, not force. Press lightly with the ball of your fingertip as though you were giving fingerprints. Best results come from using the ball of your finger, not the very tip. Most objects will not trigger the keypad–knives, screwdrivers, tools, etc. do not have enough surface area in contact with the key to register as a keypress. (You might get it to trigger with a medium sized conductive bolt head, if you have skin in contact with the bolt.)

One consequence of the design of the touch sensitive keypad is that it is sensitive to water streams. For this reason, WeighTech includes a unique “washdown mode” to prevent unwanted keypad activity during washdown/sanitation/cleanup intervals. When the indicator is in washdown mode, the indicator will weigh normally but the keypad is locked out.

To unlock the keypad, you must play follow the leader. One key will be lit. Press it. Another key will then light up. Press it. Continue until the indicator displays “Exit washdown”. The indicator will require that you press five keys in a row correctly before it will unlock the keypad. Any wrong keypress will restart the counter back to five. The odds are extremely slight that random water splashing would ever be able to trigger the correct keys in the correct order to unlock the keypad.

3 Main menu items

3.1 “Power off”

Touch the enter key to select this menu item, which will power down the indicator. If the auto-on jumper is installed on the interface board, the indicator will immediately turn back on.

3.2 “Washdown”

This function puts the indicator in washdown mode to prevent inadvertent keypad activity. See the washdown section of this manual for more information.

3.3 “Totals”

This function leads to the totals submenu.

3.4 “Calibrate”

This function allows you to calibrate the scale. Refer to the calibration section of this manual for details.

3.5 “Setup Menu”

Enter the setup submenu, where scale parameters can be viewed or set.

3.6 “Audit cfg”

Displays the audit counter for configuration. Every time a sealed scale parameter is modified this counter will increment by one. This setting is nonvolatile (it will be retained even if the batteries go dead) and cannot be altered except by modifying an audited configuration parameter.

3.7 “Audit cal”

Displays the audit counter for calibration. Every time the scale is calibrated this counter will increment by one. This setting is nonvolatile (it will be retained even if the batteries go dead) and cannot be altered except by performing a calibration.

3.8 "Tare"

Keypad entered tare: Touch the Enter key to set a new pushbutton tare by scrolling through digits one place at a time. Keypad tare values are entered in the current units, and are limited to be greater than gross zero weight and less than the indicator capacity. Entering a tare of zero will clear any existing tare from indicator.

4 How to Step Through Menus

From the main weight display, press the "Menu/Help" key. You are now in a menu, and the keys now have different functions:

Cancel Help Enter Down Up

- "Cancel" will back you out of the menu one level at a time.
- "Help" will display information about the current choice (option).
- "Enter" has various functions, depending on where you are in the menu.
- The "Down" key will scroll backward through the menu choices.
- The "Up" key will scroll forward through the menu choices.

4.1 Menus can contain several different items

An item with a "*" on the right end will do something when you press the enter key– something might be turn the indicator off, drill down into another menu, clear totals, or start a calibration routine. The item with a numeric value (scale capacity, for instance) at the right side of the display might allow you to change the number by pressing the enter key. An item with text (such as "on" or "off") at the right side of the display might allow you to select from a list of options by pressing the enter key. Some items are just for reference and cannot be changed at all. Examples of reference items would be the software name and revision–these are set when the software is written and cannot be changed.

4.2 How to enter a number

Using the calibration routine as an example: Press the "Enter" key. The indicator display will show "Cal weight _" and the cursor will be blinking. The blinking cursor is the clue that you can enter an arbitrary number using the up, down, right, and enter keys. Pressing the up/down keys will scroll through the list (0 1 2 3 4 5 6 7 8 9 - .) in turn. When the desired number appears, press the right arrow (menu/help) key. The blinking cursor will advance one digit to the right, leaving your selected number in place. Continue this sequence until the desired numeric value is visible on the display. Press the "Enter" key to accept the value, or the "Cancel" key to abort.

Example: Enter a calibration weight of 25 pounds

- Start with the indicator at a normal weight display (" 0.00 lb")

- Press the “Menu/Help” key
- Scroll through the main menu using the up or down arrow keys until “Calibrate *” is displayed on the indicator
- Press the “Enter” key to start the calibration routine
- The indicator may display “Password” if a calibration password is required. If so, enter it (default calibration password is “Zero” “Zero” “Zero”)
- The indicator should now be displaying “Cal Weight” and a blinking cursor.
- Press the up arrow key. The display should now show “Cal weight 1”
- Press the up arrow key again. The display should now show “Cal Weight 2”
- Press the right arrow key to accept the first digit (2) and advance the blinking cursor to the next digit. The indicator should display “Cal weight 2_”
- Press the up arrow key five times to select a 5 as the second digit. The indicator should now display “Cal weight 25”
- Press the “Enter” key to accept 25 pounds as a calibration weight.
- The indicator will display “Cal–zero weight”. Press the “Cancel” key to abort the calibration process.

4.3 How to select from a list

This is very much like stepping through a menu. Some settings (such as displayed resolution) must be limited to one of several predetermined values. To edit one of these settings, press the “Enter” key. The currently selected value will move from the far right of the display to the left. This indicates that you may use the up and down arrow keys to scroll through a list of possible values for this setting. Once you’ve selected a value for the setting, press the “Enter” key to complete the selection process. As always, pressing the “Cancel” key will cancel the selection and restore the setting to the previous value.

5 General Scale Operations

5.1 Scale On Procedure

Touch the “Zero / On” key. Indicator will come on and display will read “MicroWeigh by WeighTech” and then continue to the weigh mode. At this point the scale is ready for product or operator input.

5.2 Scale Off Procedure

To turn the scale off touch the “Menu / Help” key. The indicator will display “Power off *”. At this point touch the “Print / Enter” key and scale display will go blank, and the indicator will be off. (If the auto-on jumper is installed on the interface board, the indicator will immediately power up.)

5.3 Zero Procedure

To zero the indicator touch the “Zero / On” key and the indicator will take a new zero. If the current weight reading is unstable, under capacity, or over capacity, no new pushbutton zero will be established.

5.4 Units Procedure

To change the units of measure touch the “Units / Cancel” key. The units will change between pounds, kilograms, grams and ounces (assuming all the units are enabled in the “Parameter” menu) each time that the key is touched.

5.5 Tare Operation

Press and hold the tare button to establish a pushbutton tare reference. If a valid tare is established, the indicator will switch to the net weight display. If the gross weight is equal to or less than gross zero, any existing tare value will be cleared, the display will show “Tare cleared” for about one second, and the display will revert to gross weight display.

Toggle between net and gross display modes by touching the “Tare” button. If no tare reference has been established, the indicator will not switch to net weight mode.

An arbitrary tare weight can be entered from the tare setting in the main menu (keypad tare). Scroll and select digits one at a time to enter the desired value. The indicator will not accept a keypad tare value in excess of scale capacity, or less than zero. Entering a value of zero will clear any existing tare and return the indicator to the gross weight display mode. Units for the entered weight is the same as the currently displayed units. (To enter a six pound tare, be sure that the display is showing weight in pounds before entering the keypad tare.)

6 Machine Operation

6.1 Initial setup

After powering up the indicator, you may see “Setup Required” on the display. If so, go into the “Parameter” menu and set the scale capacity. “Cal required” means that the indicator has not been calibrated, and calibration must be done before the machine will operate. Once the capacity has been set and the indicator has been calibrated, you may want to adjust some of the values in the “Dump Setting” menu.

"Target" should be set to the desired target weight of your box or bag. "Dump Limit" is the hopper capacity, or maximum size of a dump. In most cases this will be set at the factory and won't require adjustment. The "Bag" setting controls whether or not the bag opener will activate during the machine operating cycle. Set "Bag" to "On" only if you're using the bag opener, "Off" otherwise.

If you want the machine to automatically dump, set "Switch" to "Off". If the machine should wait for the operator to press the dump button, set "Switch" to "Std". There is also a "Rev" option, but it should only be used if a proper replacement (normally open) switch cannot be found, and you are forced into using a normally closed switch.

If the machine is a single unit (not communicating with another indicator to coordinate a diverter gate), set the "Dump settings" / "Comm" setting to "Single".

To run the dual bagger/bulker with a pair of indicators and a shared top diverter gate, several other parameters must be set. In the "Dump Settings" menu, configure one indicator to be the master (set "Comm" to "Master"), and the other to be the slave (set "Comm" to "Slave"). Ensure that "Diverter" is set to "Auto". This will allow the diverter gate to feed one side until it reaches target weight, then toggle to the other side.

If the system is a dual and needs to control an incline/infeed belt with a passive diverter (no gates), the "Infeed" setting on the master indicator should be set to "Incline". In this mode the infeed drive will turn on if either side is trying to fill and turn off it both sides are full. It will also turn the drive on if the master indicator is in idle mode (for easier washdown).

6.2 Startup

Ensure that all hoppers are empty and that all moving parts are in good working condition. Power up the machine and indicator. No air cylinders should move when the indicator is powered on.

Touch the "Menu" key, scroll until "Production" is visible, and touch the "Enter" key. You can now scroll between the production options, so scroll until "Cycle On" is visible, and touch "Enter". The display will show "Dump Cycle On", pause for a second or so, and return to the normal weight display. The machine will now begin operation (buffer hopper gate will open and the weigh hopper gate will close). You may also notice that the left side of the display now shows "On". This indicates that the machine is in the automatic weighing cycle. (If the machine is equipped with a washdown or idle button, you can pull the switch out to start the automatic operating cycle.)

6.3 Shutdown

From the normal weight display, touch the "Menu" key. Scroll up or down until you reach the "Production" menu. Touch the "Enter" key, and again scroll until "Cycle Off" is visible on the display. Touch the "Enter" key. The display will show "Dump Cycle Off" for a few seconds, return to the normal weight display, and go into the off mode. In off mode, all hopper gates will close to prevent product flowthrough and the machine will not cycle. The left side of the display should show "Off" in this mode.

6.4 Cleanout

Select “Cycle Idle” from the “Production” menu to enter idle mode. In idle mode, the hopper gates will all lock in the open position to allow cleaning. The indicator display will show “Idle” on the left side when the machine is in this mode. (If the machine is equipped with a washdown or idle button, you can push the switch in to place the machine in idle mode.)

6.5 Target Weight

The target weight can be changed while the machine is in any operating mode, even while running production. Touch the “Menu” key, scroll until “Production” is shown on the display, touch “Enter”, and scroll until “Target” is visible. Once the target weight is visible on the display, touch the “Enter” key to modify it. Use the up or down arrows to adjust each digit in turn and press either “Enter” to set the new target weight, or “Cancel” to leave the target weight setting unchanged.

6.6 Dump Cycle

The dump cycle is the operating cycle of the automatic weighing machine. The machine will attempt to fill the weigh hopper until target weight is exceeded. At this point, the buffer hopper gate will close. Once closed, the machine will pause to allow the weight to stabilize. If the “Switch” setting is set to either “Std” (for use with a normally open switch) or “Rev” (for use with a normally closed switch), the machine will wait for the dump switch to be pressed before opening the weigh hopper gate and dumping product into the bag or box. As the product empties from the weigh hopper, the weight is monitored. Once the weight drops below the “Zero Thrs” setting, the weigh hopper gate will close. At this point in the operating cycle, the machine will pause for up to “Zero time” seconds to allow the weight to stabilize again (with the weigh hopper empty). If “Autozero” is turned on, the weight in the weigh hopper will be zeroed out. (Zeroing the weight at this point in the operating cycle helps keep dump weights accurate even if there’s some build up on the weigh hopper.) The cycle then repeats by opening the buffer hopper gate and filling the weigh hopper again.

6.7 Puffer

The “Air mode” setting controls when the air puffer will fire. If it’s set to off, the puffer will not be used. If it’s on, the puffer will blow air continuously as long as the machine is in cycle on mode. In pulse mode, it will pulse on and off while filling. In continuous mode, it will blow while filling.

7 Calibration Procedure

7.1 Entering the calibration menu

With the indicator on and displaying weight, touch the “Menu / Help” key. The display will read “Power off *”. Use the up / down arrows until the display reads “Calibrate *”. Touch the “Print / Enter” key and the display should then show “Password”. At this point key in the calibration password. (The default calibration password is “Zero” “Zero” “Zero” .)

7.2 Keying in cal weight

The display will show “Cal weight _” and the cursor will be blinking. Using the up, down, and right keys to enter the size of your calibration weight in pounds (i.e. 1, 2, 5, or 10). Press “Enter” to accept the cal weight, or “Cancel” if you make a mistake.

7.3 Calibration Example

(Entering a 25.00 lb cal weight value.) The blinking cursor is the clue that you can enter an arbitrary number using the up and down keys. Pressing the up/down keys will scroll through the list (0 1 2 3 4 5 6 7 8 9 - .) in turn. When the desired number appears (2), press the right arrow “Menu / Help” key. The blinking cursor will advance one digit to the right (2 _), leaving your selected number in place. Continue this sequence until the desired numeric value is visible on the display (25_) (25._) (25.0_) (25.00). Press the “Enter” key to accept the value, or the “Cancel” key to abort.

7.4 Establishing a zero

The indicator will display “Cal–zero weight”. Clear the weighing platform of any foreign objects and once all vibration has died out, press the “Enter” key. Make sure that the platform is not disturbed during this process. Indicator will display “Zeroing...” as it takes an average reading of the zero offset weight (about three seconds).

7.5 Accepting a cal weight

The indicator will then display “Cal–add weight”. Add weight to the weighing platform (the weight should be the same amount as the keyed in cal weight) then touch the “Enter” key. The indicator will display “Scaling...” for about three seconds as it performs internal calculations. Finally, the indicator will display “Cal done” for about one second once the calibration cycle is complete.

8 Scale Parameters

To get to the parameters touch the “Menu/Help” key (indicator will display “Power off *”). Use the up or down arrows until the indicator displays “Setup Menu”. Touch the “Print/Enter” key and the indicator will prompt for a password. The password for this

step will be as follows: starting from the left side of the keypad touch each key in turn from left to right. After entering the password the indicator will display "Parameters *". At this point touch the "Print/Enter" key to access the parameters. Use the up and down arrows to scroll through and view each parameter.

"Units" This parameter controls the setup unit of the indicator. Select from pounds (lb), kilograms (kg), grams (g), and ounces (oz). Once set, the indicator capacity, resolution, and calibration weights will be entered in this unit. The units parameter is both sealed and audited.

"Capacity" Capacity sets the maximum capacity of the indicator, in setup units. This parameter is both sealed and audited. Factory default is 0, which must be changed before the indicator will weigh.

"Resltn" Parameter that sets the resolution of the indicator. Resolution is limited to values available on the scroll list. Resolution is set in terms of the setup units. This parameter is both sealed and audited.

"Stability" This parameter controls how many consecutive weight readings are required to be within the motion sense band before the weight indication is considered to be stable. The indicator reads the analog input 7.5 Hz (7.5 times per second), so the default setting of four requires about a half second of stable weight. Either the net or gross light will come on when the weight is stable. This parameter is both sealed and audited.

"Motion sns" Amount of motion, in divisions, allowed before the weight is considered unstable. Default is one division. This parameter is both sealed and audited.

"Prefilter" Length of the prefilter buffer. Larger numbers provide slower and cleaner weight readings. Default is 2. This parameter is both sealed and audited. Range?

"AZT" Auto zero tracking on/off. This parameter is neither sealed nor audited. When on, stable weights within the "AZT band" of zero will automatically rezero the scale.

"AZT band" Amount of weight, in divisions, that can be automatically zeroed out at one time. Default is 1 division. Parameter is sealed and audited.

"Calibrate" This function starts the indicator calibration routine. It is sealed and audited. Refer to the calibration section of this manual for details.

"IZ set" When this parameter is on, the indicator will attempt to establish a new initial zero every time the indicator powers on. HB44 limits the amount of weight that can be initially zeroed to 20% of scale capacity. (This initial zero does not reduce the indicator capacity.) This parameter is both sealed and audited.

"lb units" Select on/off to enable or disable the pounds (lb) units when the Unit key is pressed in weighing mode. This parameter is both sealed and audited.

"kg units" Select on/off to enable or disable the kilograms (kg) units when the Unit key is pressed in weighing mode. This parameter is both sealed and audited.

"g units" Select on/off to enable or disable the grams (g) units when the Unit key is pressed in weighing mode. This parameter is both sealed and audited.

"oz units" Select on/off to enable or disable the ounces (oz) units when the Unit key is pressed in weighing mode. This parameter is both sealed and audited.

"Defaults" Restore all configuration parameters to factory default. This function is sealed and audited. Restoring factory defaults will require that the indicator be calibrated and reconfigured before it will weigh.

9 Display Messages

9.1 General Warning/Error Messages

The following warning and error messages may appear at any time that the display is showing the current weight. They will not be visible when the indicator is displaying a menu item.

"Setup required" The indicator is still set to factory defaults, and will require configuration before entering service. This message will clear once the scale capacity (in "Setup Menu"/"Parameters") has been set.

"Cal required" The indicator has not yet been calibrated. This message will clear once the scale has been calibrated.

"Excite Shorted!" The measured load cell excitation voltage has been below 1V for more than one second. To prevent any damage to the indicator or load cell, the excitation supply has been disabled. Double check the load cell cable and connections to the interface board, especially at the terminals marked "EX+" and "EX-". The indicator must be turned off and back on again to clear this message.

"ADC Full Scale" The analog to digital converter reading the load cell went to full scale positive or negative for more than a second. This is usually caused by faulty wiring, or in severe cases, a seriously damaged load cell. Check connections, especially on the terminals marked "S1+" and "S1-". This warning will clear automatically when the load cell readings come back into the normal range.

9.2 Calibration Warnings

The following warning messages may appear when entering the calibration routine.

"Check load cell" This warning will only appear when entering the calibration routine. It indicates that the load cell reading is past full scale positive or negative. Calibration will not be allowed in this case. Refer to "ADC Full Scale" warning for troubleshooting information.

"Check excite" The load cell excitation supply was measured at less than 4.0 volts. Check the load cell and wiring, especially the terminals marked "EX+" and "EX-". This warning can also be caused by excessive load cell current drain, such as from more than four load cells tied together, or a load cell with damaged strain gauges.

"Check ex- wire" Both load cell signal outputs were measured at more than 4.0 volts. This usually indicates that there's a poor connection at the "EX-" terminal, or that the load cell excitation wiring has gone open (such as from physical damage to the cable).

"Check ex+ wire" Both load cell signal outputs were measured at less than 1.0 volts. This usually indicates that there's a poor connection at the "EX+" terminal, or that the load cell excitation wiring has gone open (such as from physical damage to the cable).

"Check signals" The difference between the two load cell signal outputs was measured at more than 0.2 volts. This much imbalance between the two signals is usually caused by either incorrect wiring (such as swapping an excitation and signal wire), or by a severely bent load cell. Check connections, try swapping pairs, or replace the load cell.

"Check sig+ wire" The positive load cell signal was measured at either less than 1.5 volts or more than 4 volts. Check wiring at terminal marked "S1+", check that the load cell signal and excite pairs are correct, and finally consider that the load cell may be damaged.

"Check sig- wire" The negative load cell signal was measured at either less than 1.5 volts or more than 4 volts. Check wiring at terminal marked "S1-", check that the load cell signal and excite pairs are correct, and finally consider that the load cell may be damaged.

10 Menus

10.1 Main menu

Power off	Turn off the indicator
Production	Enter the production submenu
Washdown	Disable keypad to prevent false keypresses during washdown
Calibrate	Enter quick calibration routine
Setup menu	Bunch of stuff...see below
Audit cfg	Number of times an audited config parameter has been changed (HB44)
Audit cal	Number of times indicator has been calibrated (HB44)
Tare	Current tare weight

10.2 Production menu

Cycle on	Start automatic dump cycle
Cycle off	Stop automatic dump cycle, close all gates
Cycle idle	Stop automatic dump cycle, leave all gates open for product flowthrough (failsafe)
Target	Target weight for complete batch, in pounds
Tol low	Lower limit (subtracted from target) if tolerance is enabled
Tol high	Upper limit (added to target) if tolerance is enabled
Totals	Display total weight, batch count, and average batch weight

10.3 Totals menu

Tot wgt	Total gross weight, in pounds
Bat cnt	Total number of batches/bags
Avg wgt	Average weight of each batch/bag, in pounds
Clear totals	Clear accumulated totals (will ask you to confirm, touch "Enter" a second time to clear)

10.4 Setup menu

Parameters	Scale settings
Dump settings	Settings that control the automatic dump cycle operation
IO Test	Test output modules
Info menu	Troubleshooting features
Clock	Set time/date
Contrast	Control display intensity

10.5 Parameters

Setup units	Setup units: used for entering capacity and resolution (defaults to pounds)
Capacity	Scale capacity, in setup units
Resltn	Scale resolution, in setup units
Stability	Number of consecutive readings required for stability
Motion sns	Number of divisions allowed before weight is considered unstable
AZT	On/Off: Autozero tracking on/off, only affects weights near zero
AZT band	Amount of weight (in divisions) that can be zero tracked out
Calibrate	Start calibration routine
IZ set	Set initial zero at power up (default to off)
lb units	On/Off: Enables the units toggle key to include pound units
kg units	On/Off: Enables the units toggle key to include kilogram units
g units	On/Off: Enables the units toggle key to include gram units
oz units	On/Off: Enables the units toggle key to include ounce units
Filter	Weighing filter speed: range of 0-0.9. Larger numbers make the filter slower, but weights are more stable
Address	Communications/scale address
Cntst	Enable or disable the three key quick contrast adjustment
Defaults	Restore scale to factory default settings (all settings will be lost!)

10.6 Dump settings

Target	Target weight for complete batch, in pounds
Dump lmt	Target weight for each dump, in pounds (hopper capacity)
Zero thrs	Dump cycle zero threshold, in pounds (default is 5 pounds)
Autozero	Dump cycle autozero settings (on/off)
Zero time	How long (in seconds) to wait for an autozero to happen
Empty time	Extra time that weigh hopper will stay open after dropping below zero threshold
Line Stop	How long to wait after hitting target before shutting off infeed
Weigh TO	How long to wait for a stable dump weight (0 waits forever)
Shock	Number of consecutive readings above target weight before target is reached
Filtered	On/Off: Controls whether or not the target is compared to filtered or unfiltered weight
Bag	On/Off: Controls whether or not the bag opener will extend during the dump cycle
Dump sw	all/last/first/f+l/none: Controls whether you must press the dump switch to release each dump, the last dump in the batch, the first dump in the batch, the first and last dump, or none of the dumps.
Switch type	Off/Std/Rev: Controls whether or not a switch press is required to dump (Std: N/O, Rev: N/C)
Comm	Single/Master/Slave: Select one indicator of the pair as the master, the other as a slave
Diverter	Auto/Master/Slave: Force the diverter gate to one side or the other, useful when testing plumbing
M1	Line stop/Infeed gate: select module M1 as infeed gate or a line stop output
Infeed	Set to “Diverter” if controlling a diverter, “Incline” if dual with passive diverter
Air mode	Cont/Pulse/Off/On: select whether the bag assist air is continuous, pulsed, or not used
Air time	Duration of air pulses when “Air mode” is set to “Pulse”
Tolerance	On/off: when on, weight must be within the tolerance zone before a dump is allowed
Tol low	Lower edge of acceptable weight range, relative to target weight
Tol high	Upper edge of acceptable weight range, relative to target weight

10.7 Info menu

ADC	Raw counts display from analog to digital converter
Offset	Calibration zero offset, in raw counts
Zero err	Number of times the dump cycle autozero timer expired (missed autozero chance)
Stbl err	Number of times the weigh hopper did not reach a stable weight
App	Name of firmware app (*puffer_1*)
Build	Software revision info (*Build 25*)
Date	Date firmware was compiled (*12/31/2013*)
Time	Time of firmware compilation (*09:06:01*)
Batt	Current power supply/battery input voltage, in V
S1+	Load cell #1 positive signal voltage (should be about half of excite voltage with good load cell)
S1—	Load cell #1 negative signal voltage (should be almost exactly the same as S1+ voltage)
Excite	Load cell excitation voltage (should be about 4.5V)
Deadload	Display platform deadload weight (assumes load cell has no offset)
TX cnt	Number of commands transmitted to other indicator
RX cnt	Number of commands received from the other indicator
Err cnt	Number of corrupted commands received from the other indicator
TO cnt	Timeout count: not used
Master	Empty/Full: Status of master indicator (not yet active)
Slave	Empty/Full: Status of slave indicator
232 audit	Transmit audit trail through RS-232 port (experimental)
IZ autoset	Force a new initial zero
IZ	Current initial zero setting
Debug msg	On/Off: Turn this parameter on for more extensive messages during boot and dump cycle
Bootload	WeighTech use only

11 Troubleshooting

11.1 Load cells

Go to the “Info menu” and verify that the “Excite” voltage is about 4.5V. A reading of less than 1V probably indicates a short from excite to ground. Confirm by removing the load cell connections. If the excite voltage reads normal with the load cell disconnected, you’ve got a short in the cable or a bad load cell.

Check to see that the signal voltage in the “Info menu” are about half of excite and equal. If one signal voltage is near zero, or near 4V, you may have a disconnected signal wire. Check that connection at the interface board. If the signal voltages are not near zero or 4V, but are more than a 0.5V different, you may have the load cell miswired, or a bent load cell.

If the indicator constantly shows “OVERLOAD” or “UNDERLOAD”, follow the

instructions above. In addition, go to the "Info menu" and watch the "ADC" reading (raw counts). It shouldn't vary more than 100-300 counts with a good load cell and a stable environment. With no load on the cell, it should be within +/- 10,000 counts of zero. (Deadload can cause the no load reading to shift.) If the no load reading is really large (say, greater than one million counts or less than negative one million counts) and the connections are solid, you probably have a bent load cell.

Unstable or noisy weights? Perform all the steps listed above. A really good test is to temporarily disconnect the load cell and substitute a known good load cell simulator (available for purchase from WeighTech), or a known good load cell. Calibrate the scale with a convenient test weight and check to see if the weight reading is stable. If so, the noisy load cell has probably been damaged or water-soaked. If the indicator still displays a noisy weight with a load cell simulator, the problem may be in the indicator. Contact WeighTech for further assistance.

11.2 Machines

Most machine related problems can be traced to bad air supply (excessive water and condensation), sticky air cylinders, worn or clogged solenoid air valves, and wiring. A quick test is to put the machine in "Cycle off" mode–all the valves should energize, shutting all the gates. Then put the machine in "Cycle idle" mode, which will de-energize all the valves and open all the gates. If a gate doesn't move during these two tests, start swapping parts around to determine where the problem lies.

11.3 Banner Optical Sensors

The Banner opto sensors will act strangely if wired incorrectly. Be certain that you connect the brown wire (12V) last when rewiring sensors with power on. If the brown and blue wires are swapped, or if the blue wire (ground) is connected last, the sensor will go into alarm mode. In alarm mode, the sensor will appear to work but the MicroWeigh controller will not receive the correct signal. If the led indicators on the Banner appear to be working correctly, but the MicroWeigh front panel indicators don't show any changes when the beam is blocked, check the Banner sensor wiring.

11.4 Before calling WeighTech...

Write down a few key pieces of information. Gather the indicator serial number from the front panel, the software application name and build number from the "Info menu", and grab the current settings if you have access to a Palm. If anything on the indicator has changed, been replaced, or been modified, mention that to the service technician too. If the problem involves fill rates, hangs, or questions regarding machine capabilities, be ready to describe the product, product flow rate, and any bag/box/tote/combo sizes. If you're calling about unstable weight readings, over/underload, or other load cell related problems, have the ADC, excite, and signal readings from the "Info menu" handy. When calling, be prepared to describe what is wrong ("it doesn't work!" isn't a good description–"hopper gate doesn't shut in off mode" is much better) and what you expected to see.

11.5 Module Assignments

Slot	Module Type	Function	Module on (lit)	Module off (dark)
M1	OAC5 (black)	Infeed/Diverter	Divert	Feed
M2	OAC5 (black)	Buffer hopper	Hopper shut	Hopper open
M3	OAC5 (black)	Weigh hopper	Hopper shut	Hopper open
M4	OAC5 (black)	Bag opener	Extended	Retracted
M5	OAC5 (black)	Bag fill (air)	Blow air	Air off
M6	IDC5 (white)	Dump switch	Pressed	

12 Replacement Parts

Part Number	Description
WE0028	MicroWeigh main gasket
WE0029	MicroWeigh power cord
WE0043	Interface Board, MicroWeigh machine control
WE0046-101	MicroWeigh machine control front housing assembly
WE0047-101	MicroWeigh machine control back housing assembly w/board
1000-9	Load cell, 100lb capacity
AA0006	Air tubing, duo blue/black, 4mm x 50m
AA0009	Air regulator
AC0002	Air cylinder, bag opener
AC0014	Air cylinder, weigh and buffer hopper
AF0001	Air fitting (pack 10) QS-1/8-6
AF0006	Air fitting (pack 10) QSL-1/8-6
AF0007	Air fitting (pack 10) QSL-1/4-6
AV0044	Air valve assembly
CB0050	Belting, series 1600, 10” wide, 20’ long, with 1.5” flights
EF0009	MicroWeigh strain relief
EP0027	Air amplifier
EP0077	Gear box, 60:1, 56C, washdown, Leeson
EP0078	Motor, 1 HP, 1725 RPM, 230/460V, 56C, washdown, Dayton
HW0018	MicroWeigh housing screw (pack 4)
HW0019	MicroWeigh trilobe screw (pack 10)
SR0001	Input relay (white)
SR0002	Output relay (black)
SS0002	Dump switch assembly
WF0014	Stainless steel bag holder

JOB: BAGGER

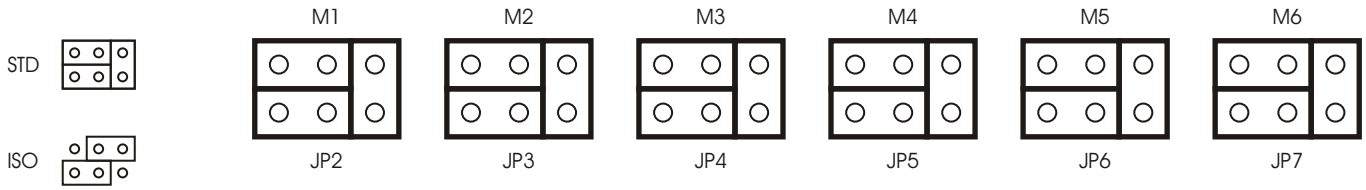
PLANT:

LOCATION:

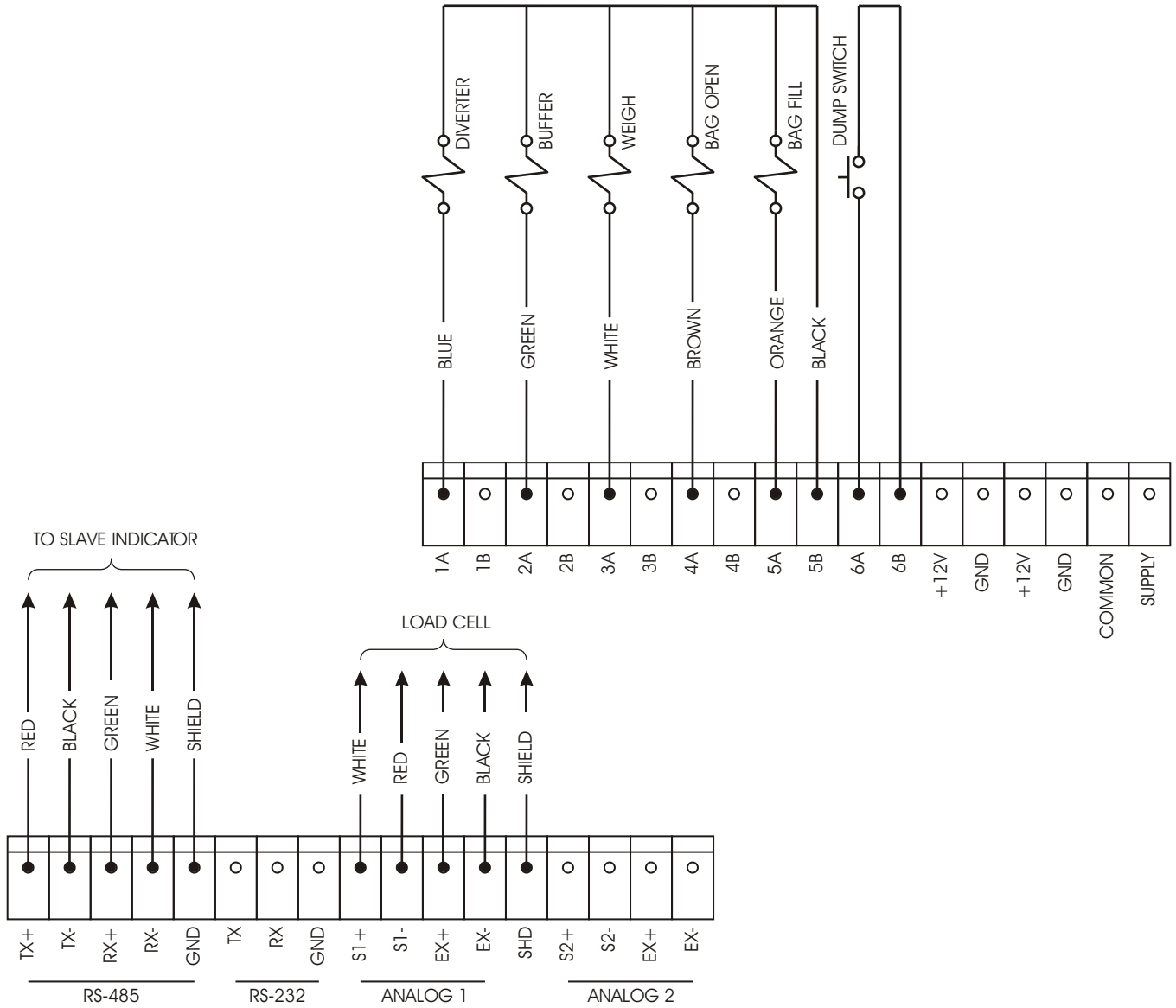
DRAWN BY: NEWELL

DATE: 05-29-2008

FIRMWARE: PUFFER_1 (MASTER INDICATOR)



SLOT	TYPE	FUNCTION	LIT	DARK
M1	BLACK OAC-5	DIVERTER	DIVERT	FEED
M2	BLACK OAC-5	BUFFER HOPPER	SHUT	OPEN
M3	BLACK OAC-5	WEIGH HOPPER	SHUT	OPEN
M4	BLACK OAC-5	BAG OPENER	OUT	IN
M5	BLACK OAC-5	BAG FILL (AIR)	AIR ON	AIR OFF
M6	WHITE IDC-5	DUMP SWITCH	PRESSED	RELEASED



JOB: BAGGER

PLANT:

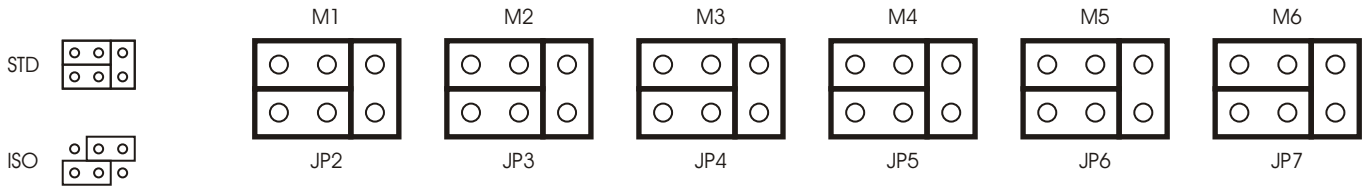
LOCATION:

PAGE: 2 OF 2

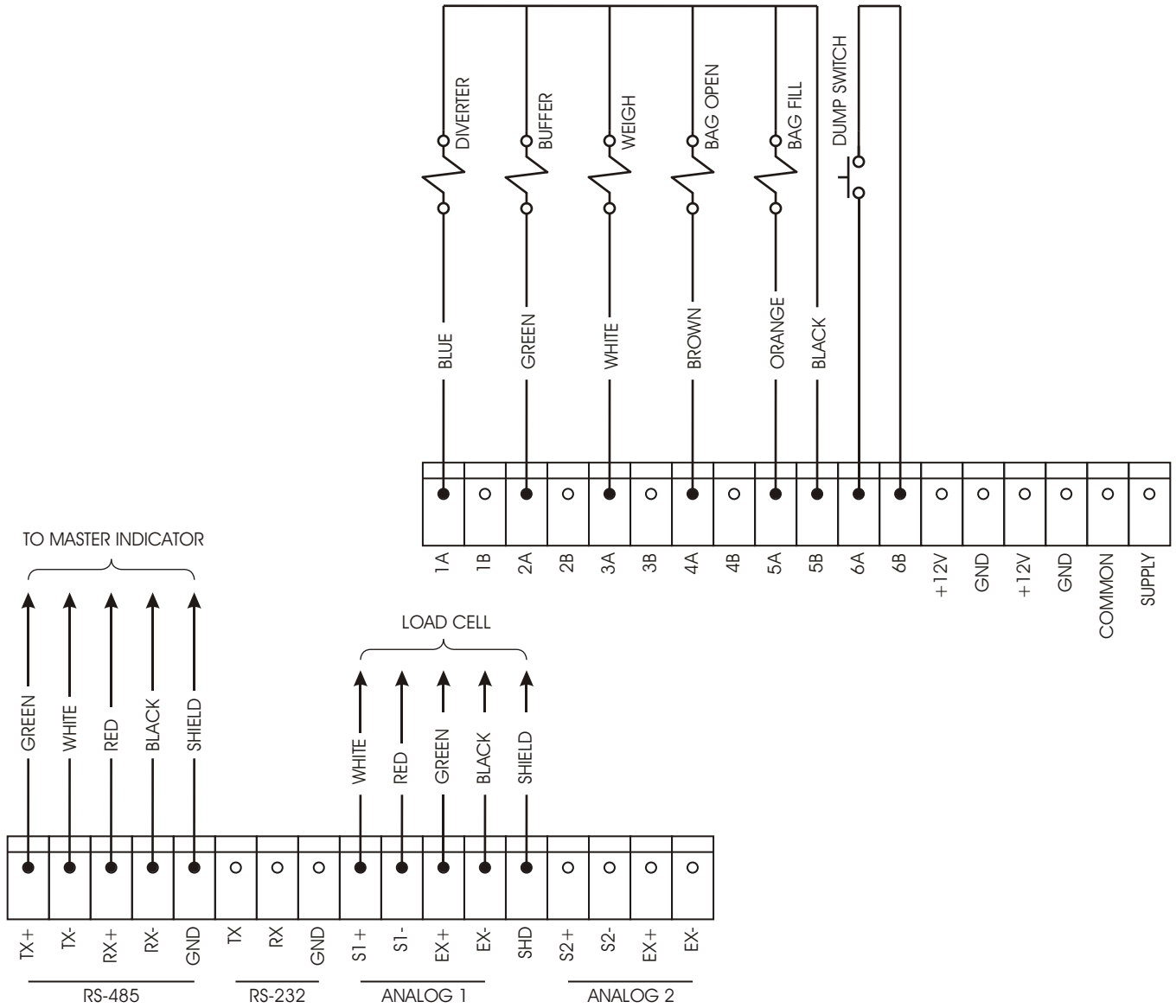
DRAWN BY: NEWELL

DATE: 05-29-2008

FIRMWARE: PUFFER_1 (SLAVE INDICATOR)



SLOT	TYPE	FUNCTION	LIT	DARK
M1	BLACK OAC-5	DIVERTER	DIVERT	FEED
M2	BLACK OAC-5	BUFFER HOPPER	SHUT	OPEN
M3	BLACK OAC-5	WEIGH HOPPER	SHUT	OPEN
M4	BLACK OAC-5	BAG OPENER	OUT	IN
M5	BLACK OAC-5	BAG FILL (AIR)	AIR ON	AIR OFF
M6	BLACK OAC-5	DUMP SWITCH	PRESSED	RELEASED



14 Load Cell Color Codes

Manufacturer	*Models*	*Signal +*	*Signal -*	*Excite +*	*Excite -*	*Shield*	*Sense +*	*Sense -*
Advanced Transducers		Green	White	Red	Black	Bare wire		
Allegany Technology		Red	White	Green	Black	Bare wire		
Artech		Green	White	Red	Black			
Beowulf		White	Red	Green	Black			
BLH	C2P1 C3P1 T2P1 T3P1	White	Red	Green	Black	Yellow		
Cardinal		White	Red	Green	Black	Bare wire		
Celtron	CSB DSR LOC SQB STC STC-SS DSR CLB HED DLB	Green	White	Red	Black	Bare wire		
	LPS	Green	White	Red	Blue	Bare wire		
	HOC MOC	Red	White	Green	Black	Bare wire		
Dillon	Canister Tension	Black	Red	Green	White	Orange		
	Compression	Black	Red	White	Green	Orange		
	Z-cell	White	Green	Red	Black	Orange		
Force Measurement		Green	White	Red	Black	Bare wire		
GSE		White	Green	Red	Black	Bare wire		
HBM	BLC BLF JRT PWS RSC SBF SB3 USB U1T Z6	White	Red	Green	Black	Yellow		
	BBS	White	Red	Green	Black	Bare		
	PLC B35	Green	White	Red	Black	Yellow		
	SP4	White	Red	Green	Black	Yellow	Orange	Blue
Interface	SSM 1200 3200	Green	White	Red	Black	Bare wire		
Kubota		Green	Blue	Red	White	Yellow		
National		White	Red	Green	Black	Yellow		
NCI		White	Green	Red	Black	Bare wire		
Pennsylvania		Green	White	Orange	Blue	Bare wire		
Phillips		Green	Grey	Red	Blue	Bare wire		
Revere Transducer	62HU 63HU 363 953 9523	Green	White	Red	Black	Bare wire		
	92CC 93CC 42U 43U 263D 462 5102 5103 5123 5223 5723 6762 9102 9103 9123 9363	Green	White	Red	Black	Orange		
	392B 642 652 692B2 BSP HPS USP1	White	Red	Green	Black	Bare wire		
	792 933 SHB SSB	White	Red	Green	Black	Clear		
	CP1 CSP1	White	Red	Green	Black	Orange		
	RLC	Brown	White	Pink	Grey	Bare wire		
Rice Lake	RL20000 RL20000SS RL20001 RL20001HE RL30000 RL35023 RL35023S RL35082 RL35082S RL35083 RL39123 RL39523 RL50210 RL65044 RL70000 RL75016 RL75016SS RL75040A RL75058 RL75060 RL75223 RL90000 RLETB RLETS RLHSS RLMK4 RL50500 RL70000SS RL71000HE RL75016HE RLMK15 RLMK21 RL75061	Green	White	Red	Black	Bare wire		
	RLMK1	White	Green	Red	Black	Orange	Yellow	Blue
	RL1521	Green	White	Red	Blue	Bare wire		
Sensotec	White	Green	Red	Black	Bare wire			
Sensortronics	60001 60008 60018 60030 60036 60040 60048 60048SS 60050 60051 60060 60060-0101 60063 65007 65016 65016SS 65016W 65023 65023S 65023SS 65024 65040A 65040S 65058 65058S 65061A 65083 65083S 65114	Green	White	Red	Black	Bare wire		
	60007 60064	White	Red	Green	Black	Bare wire		
	65088-1000 65088-1114	White	Red	Green	Black	Orange		
Tedea Huntleigh	4158	Green	White	Red	Black	Bare wire		
	3411 3421	Green	White	Red	Black	Bare wire	Blue	Brown
	240 1010 1022 1040 1042 1140 1250 1260 1320 9010 605 1030 1240 1241	Red	White	Green	Black	Bare wire	Blue	Brown
	355 620 3510	White	Red	Blue	Black	Bare wire	Green	Grey
Toledo		White	Red	Green	Black	Yellow		
Weigh-Tronics		White	Red	Green	Black	White/Orange		

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